



SANYO Semiconductors

DATA SHEET

An ON Semiconductor Company

MCH6102 / MCH6202 — PNP / NPN Epitaxial Planar Silicon Transistors

DC / DC Converter Applications

Applications

- Relay drivers, lamp drivers, motor drivers, flash.

Features

- Adoption of MBIT processes.
- High current capacitance.
- Low collector-to-emitter saturation voltage.
- High-speed switching.
- Ultrasmall package facilitates miniaturization in end products (mounting height : 0.85mm).
- High allowable power dissipation.

Specifications () : MCH6102

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CB0}		(-30)40	V
Collector-to-Emitter Voltage	V_{CE0}		(-30)	V
Emitter-to-Base Voltage	V_{EB0}		(-5)	V
Collector Current	I_C		(-1.5)	A
Collector Current (Pulse)	I_{CP}		(-3)	A
Base Current	I_B		(-300)	mA
Collector Dissipation	P_C	Mounted on a ceramic board (600mm ² X0.8mm)	1.0	W
Junction Temperature	T_j		150	°C
Storage Temperature	T_{stg}		-55 to +150	°C

Electrical Characteristics at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=-30\text{V}, I_E=0\text{A}$			(-)0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-4\text{V}, I_C=0\text{A}$			(-)0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=-2\text{V}, I_C=(-)100\text{mA}$	200		560	
Gain-Bandwidth Product	f_T	$V_{CE}(-)10\text{V}, I_C(-)300\text{mA}$		(450)500		MHz
Output Capacitance	C_{ob}	$V_{CB}(-)10\text{V}, f=1\text{MHz}$		(9)8		pF

Marking: MCH6102: AB, MCH6202: CB

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SANYO Semiconductor Co., Ltd.

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MCH6102 / MCH6202

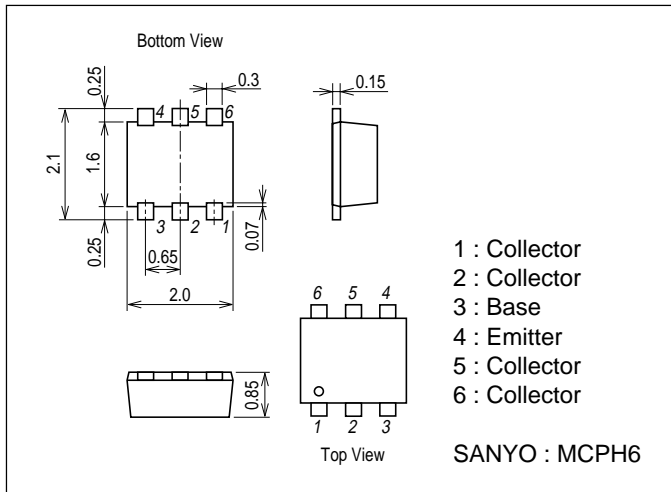
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector-to-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)750mA, I_B=(-)15mA$		(-250)150	(-375)225	mV
Base-to-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)750mA, I_B=(-)15mA$		(-0.85)	(-1.2)	V
Collector-to-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0A$	(-30)40			V
Collector-to-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-30)			V
Emitter-to-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0A$	(-5)			V
Turn-ON Time	t_{on}	See specified Test Circuit.		(37)35		ns
Storage Time	t_{stg}	See specified Test Circuit.		(115)205		ns
Fall Time	t_f	See specified Test Circuit.		(26)32		ns

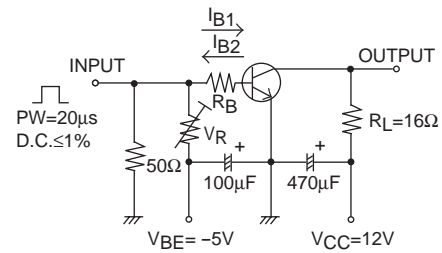
Package Dimensions

unit : mm

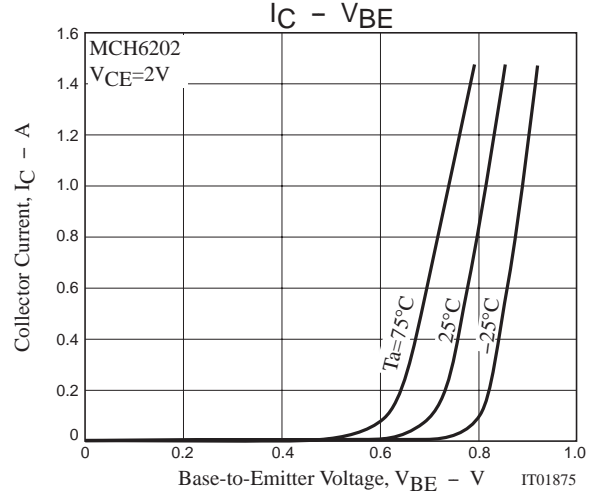
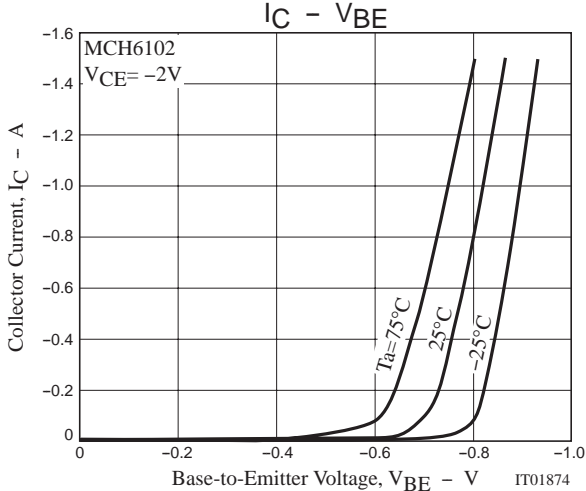
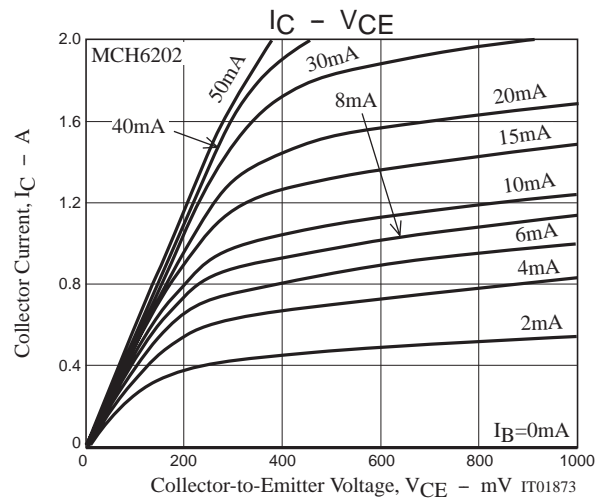
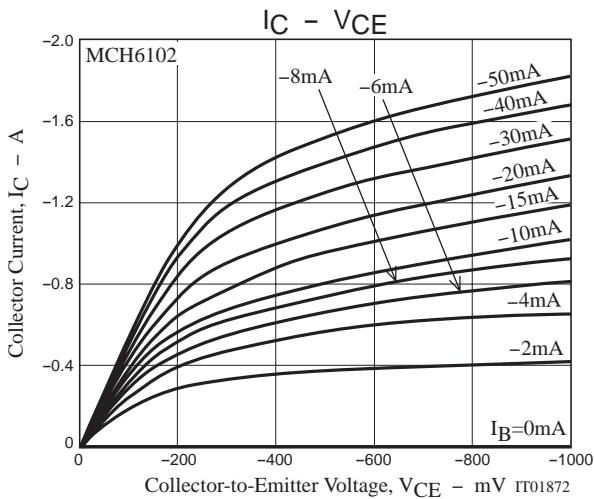
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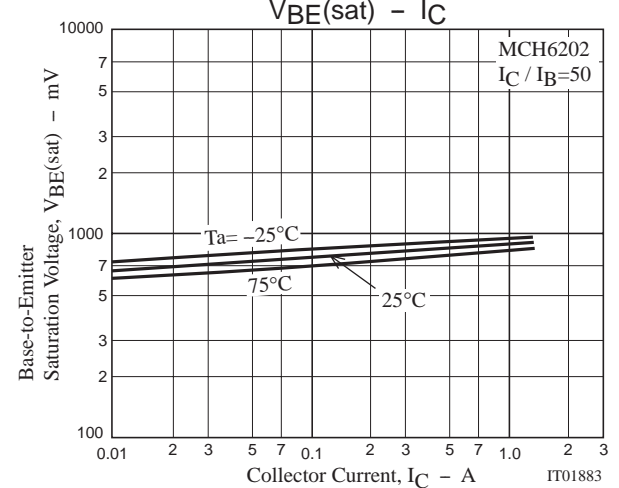
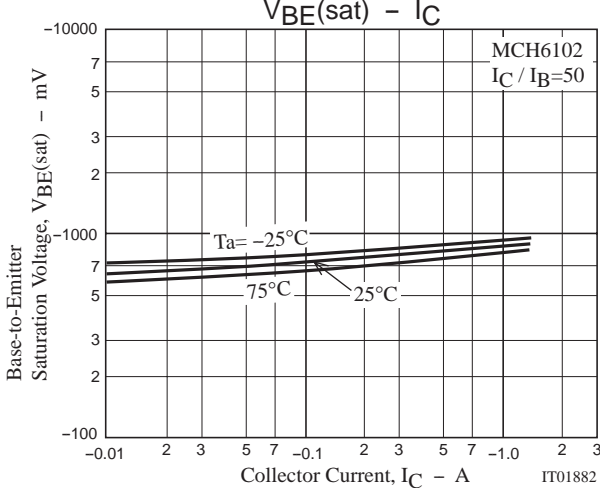
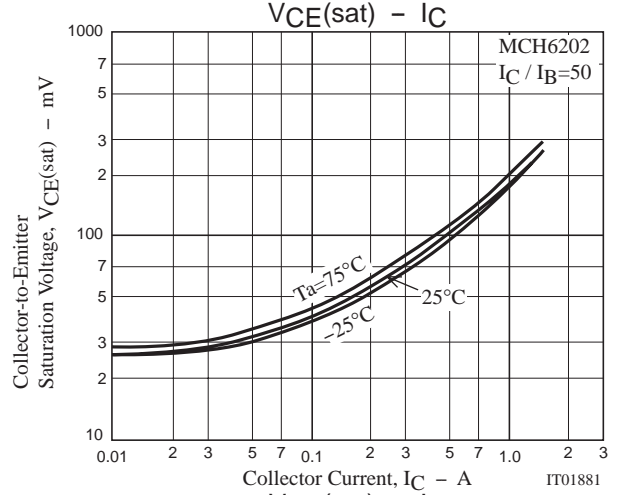
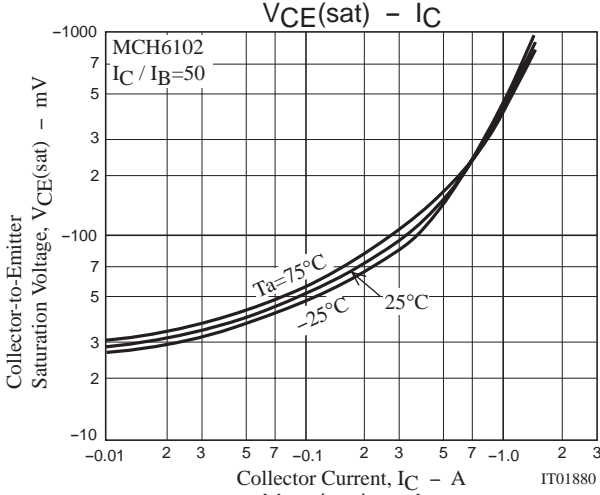
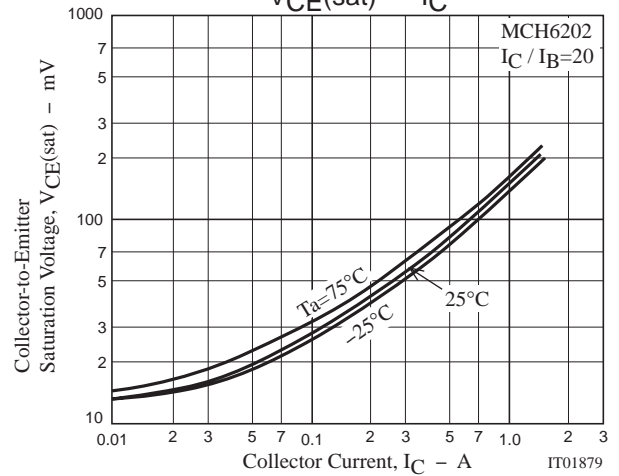
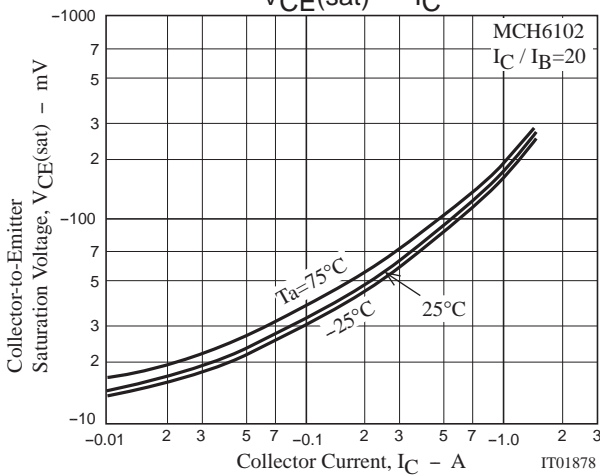
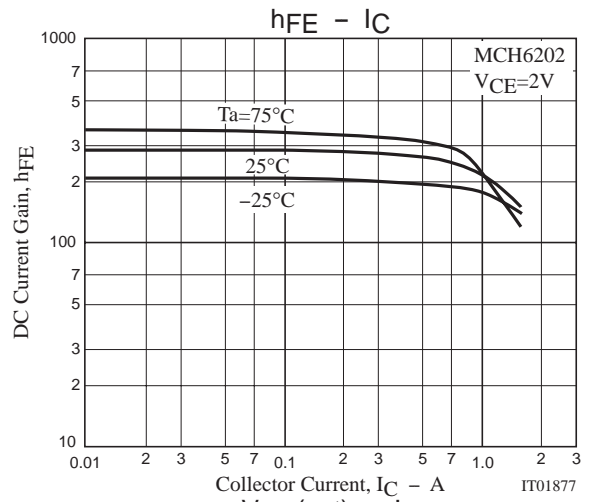
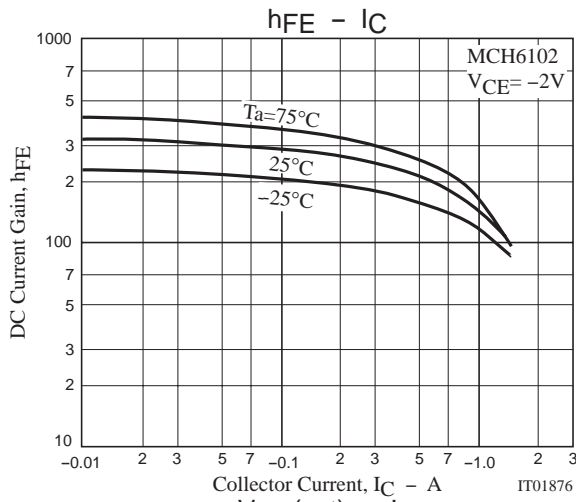
Switching Time Test Circuit



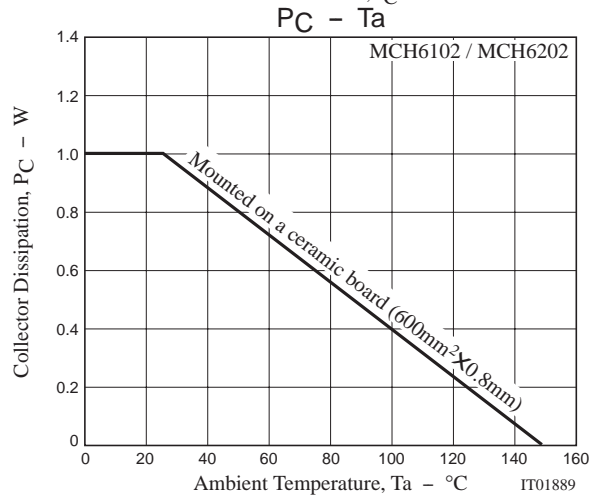
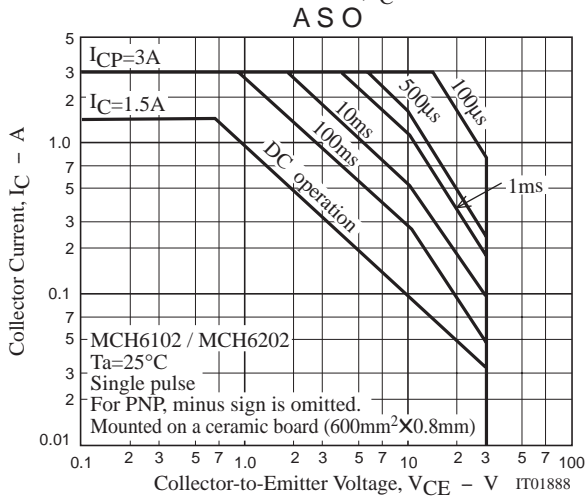
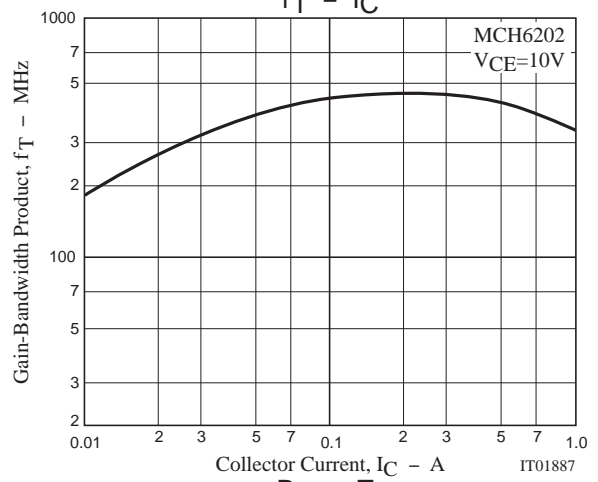
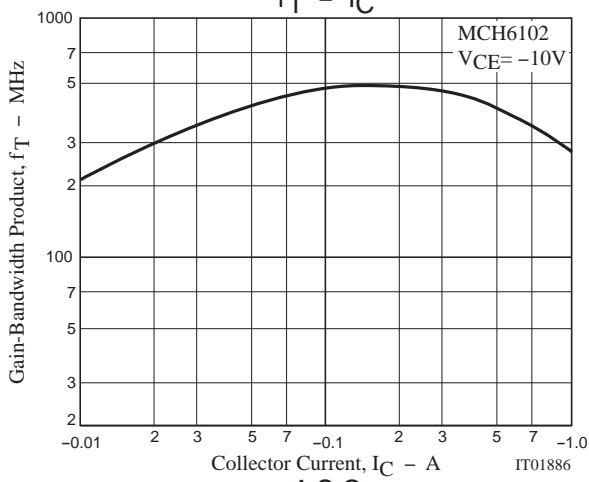
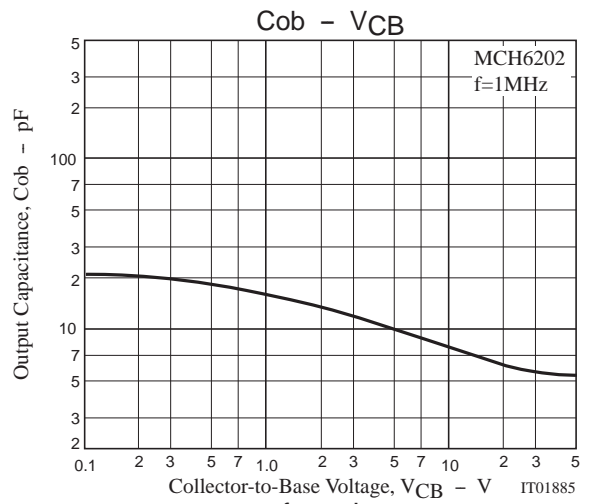
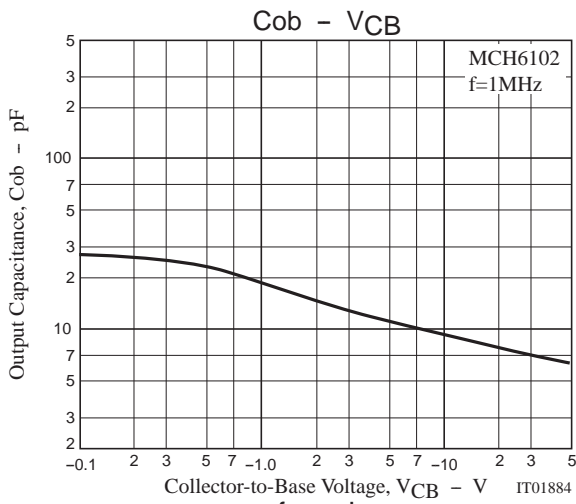
$20I_{B1} = -20I_{B2} = I_C = 750mA$
For PNP, the polarity is reversed.



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